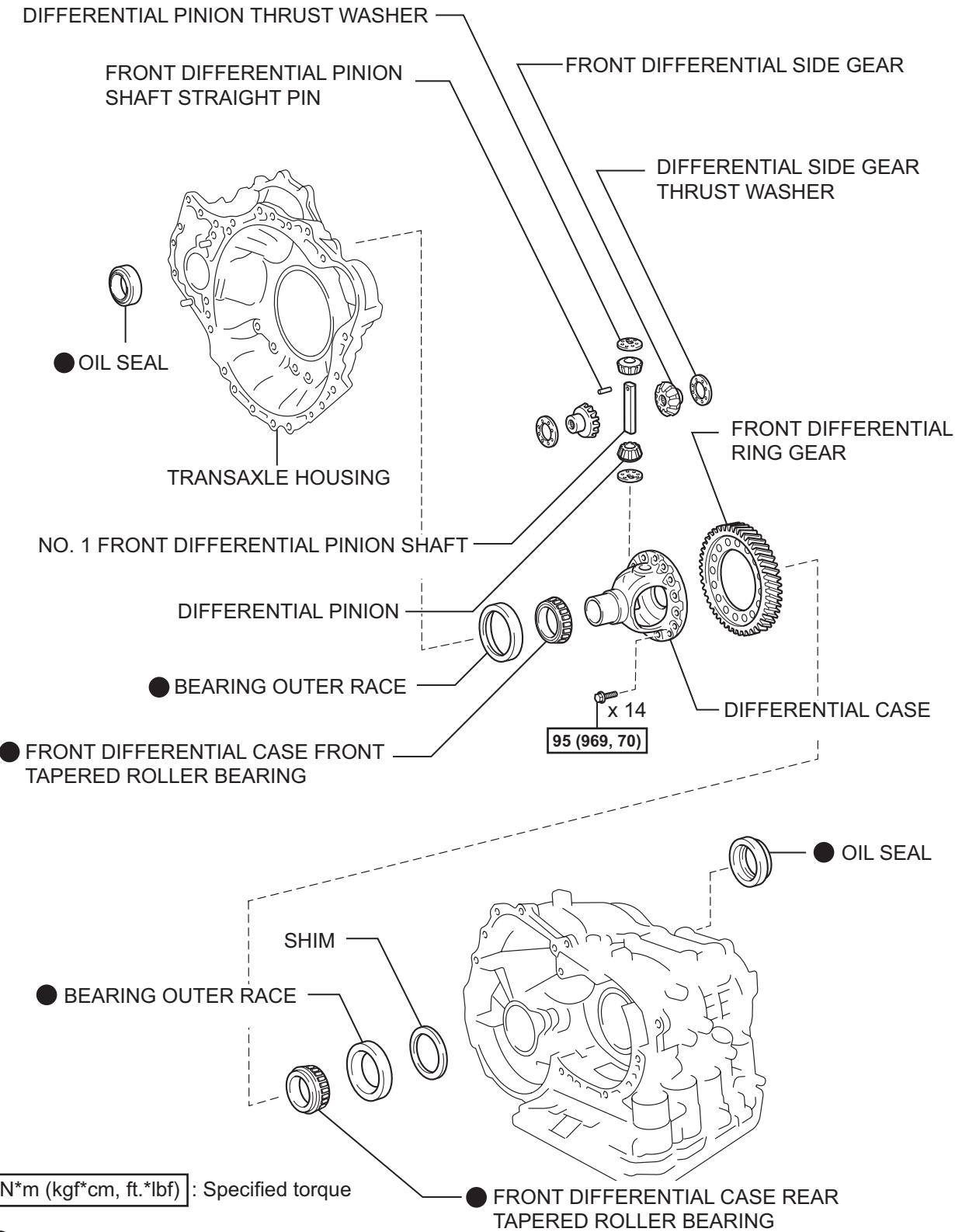
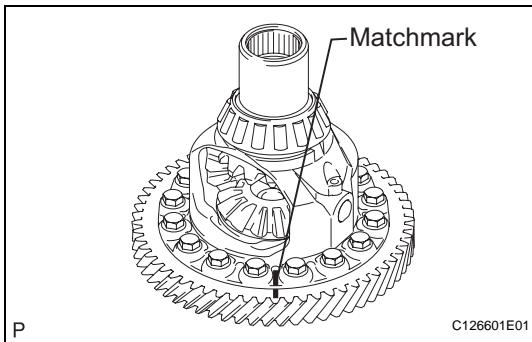


# DIFFERENTIAL CASE

## COMPONENTS



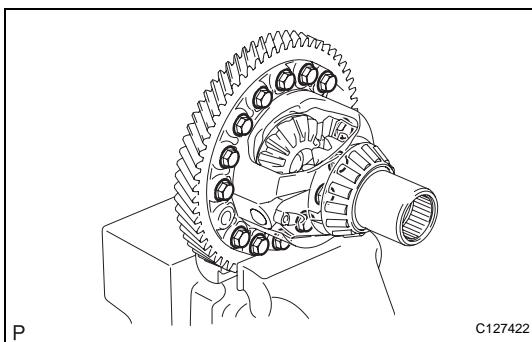


## DISASSEMBLY

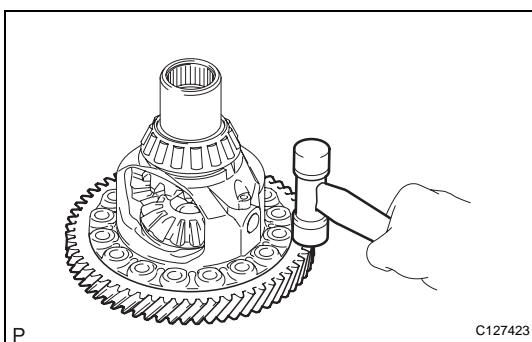
### 1. REMOVE FRONT DIFFERENTIAL RING GEAR

- (a) Place matchmarks on the ring gear and differential case.

- (b) Remove the 14 bolts.



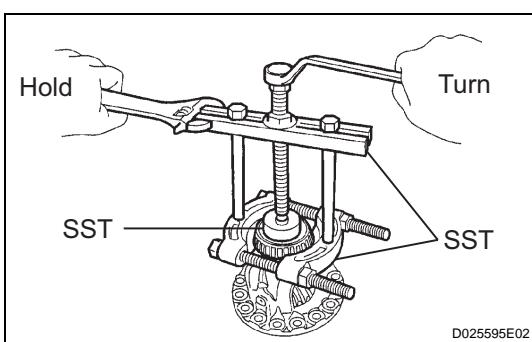
- (c) Using a plastic-faced hammer, tap on the ring gear to remove it from the case.



### 2. REMOVE FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

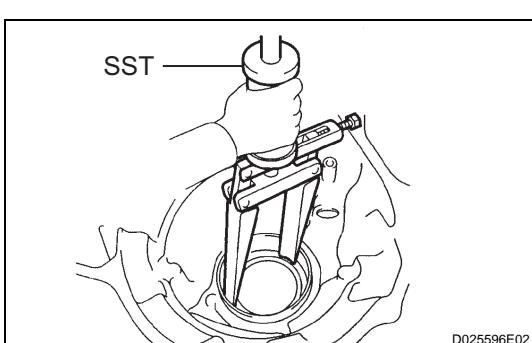
- (a) Using SST, tap out the front differential case front tapered roller bearing from the differential case.

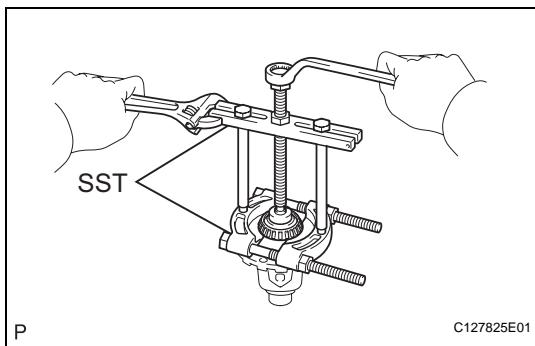
**SST 09950-00020, 09950-00030, 09950-60010  
(09951-00500)**



- (b) Using SST, remove the front differential case front tapered roller bearing outer race.

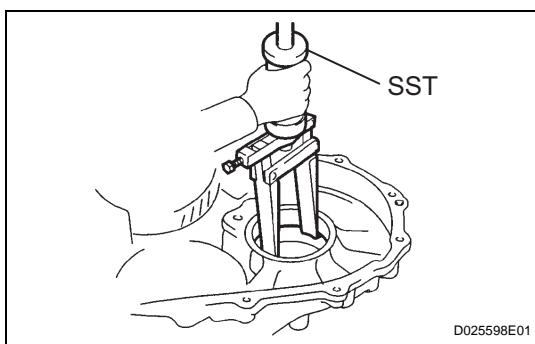
**SST 09308-00010**





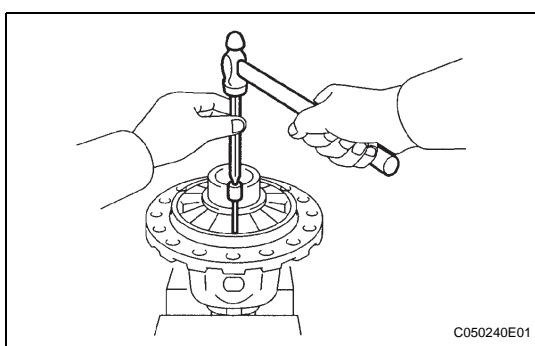
### 3. REMOVE FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

- (a) Using SST, remove the front differential case rear tapered roller bearing from the differential case.  
**SST 09950-00020, 09950-00030, 09950-60010  
(09951-00500)**



- (b) Using SST, tap out the front differential case rear tapered roller bearing outer race.

**SST 09308-00010**

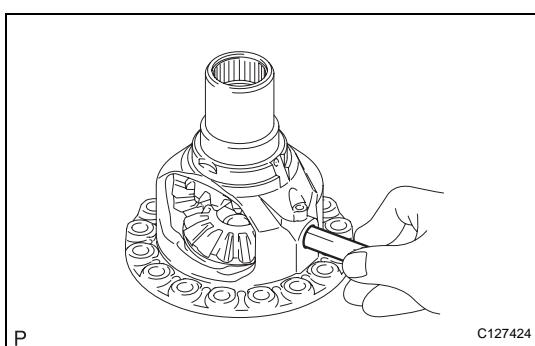


### 4. REMOVE FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

- (a) Using a pin punch and hammer, remove the straight pin.

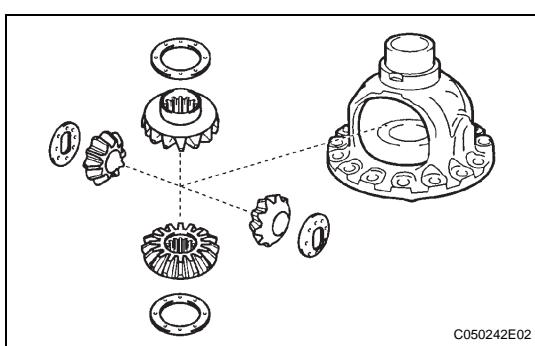
**NOTICE:**

**Before removing the straight pin, unstake it with a pin punch.**



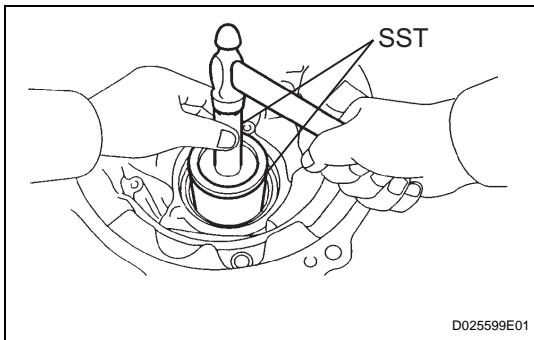
### 5. REMOVE NO. 1 FRONT DIFFERENTIAL PINION SHAFT

- (a) Remove the front differential pinion shaft from the differential case.

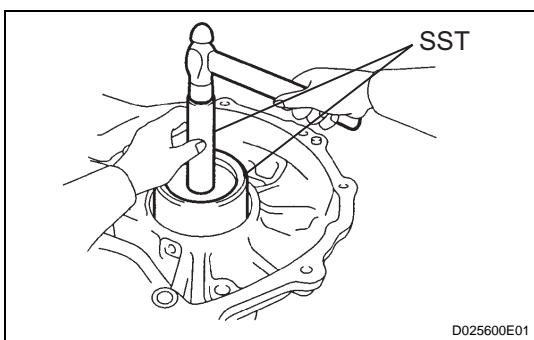


### 6. REMOVE FRONT DIFFERENTIAL SIDE GEAR

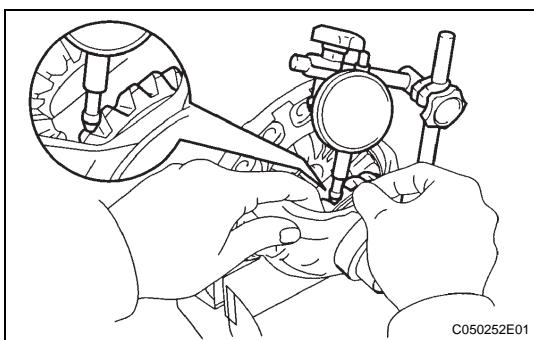
- (a) Remove the 2 front differential pinions, 2 pinion thrust washers, 2 front differential side gears and 2 side gear thrust washers from the differential case.



7. REMOVE TRANSAXLE HOUSING OIL SEAL
  - (a) Using SST and a hammer, tap out the oil seal.  
**SST 09950-70010 (09951-07100), 09215-00013 (09215-00471)**



8. REMOVE DIFFERENTIAL SIDE BEARING RETAINER OIL SEAL
  - (a) Using SST and a hammer, tap out the oil seal.  
**SST 09950-70010 (09951-07100), 09608-10010**



## INSPECTION

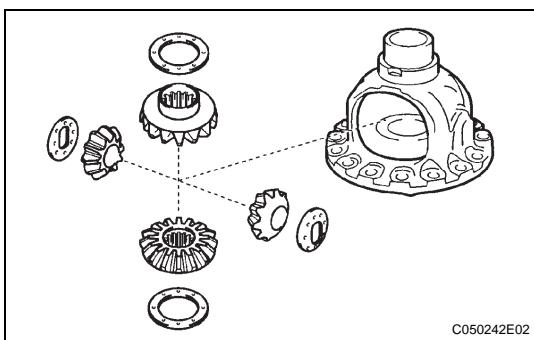
1. INSPECT DIFFERENTIAL SIDE GEAR BACKLASH
  - (a) Using a dial indicator, measure the backlash of the side gear.

**Standard backlash:**  
0.05 to 0.20 mm (0.0020 to 0.0070 in.)

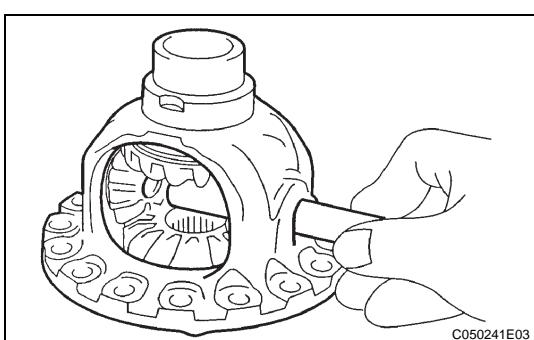
**Standard thrust washer thickness:**

  - 1.625 mm (0.0640 in.)
  - 1.725 mm (0.0679 in.)
  - 1.825 mm (0.0719 in.)

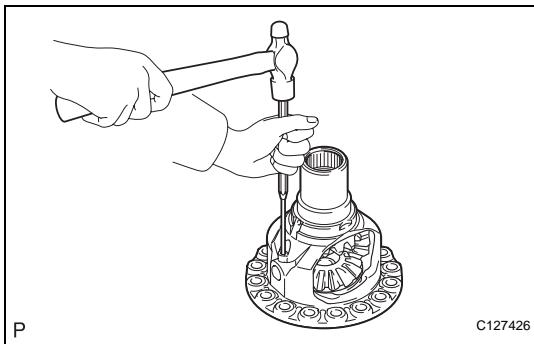
## REASSEMBLY



1. INSTALL FRONT DIFFERENTIAL SIDE GEAR
  - (a) Coat the 2 front differential side gears, 2 side gear thrust washers, 2 front differential pinions and 2 pinion thrust washers with ATF and install them to the differential case.

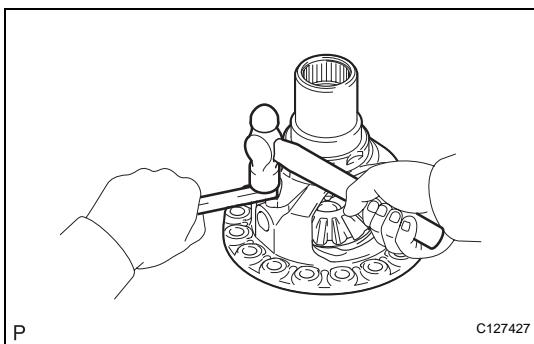


2. INSTALL NO. 1 FRONT DIFFERENTIAL PINION SHAFT
  - (a) Coat the No. 1 front differential pinion shaft with ATF, and install it to the differential case.



### 3. INSTALL FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

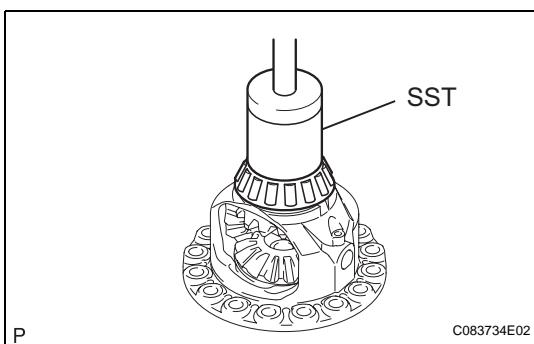
- Using a pin punch and a hammer, tap in the pinion shaft straight pin.



- Using a chisel and a hammer, stake the differential case.

**NOTICE:**

**Stake it after adjusting the backlash.**



### 4. INSTALL FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

- Using SST and a press, press in the front differential case rear tapered roller bearing to the differential case.

**SST 09550-60010, 09950-60020 (09951-00680),  
09950-70010 (09951-07100)**

**NOTICE:**

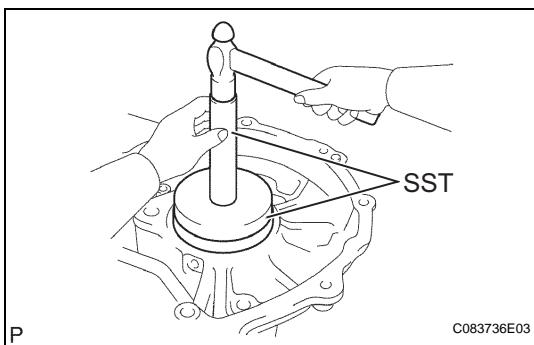
- When replacing the bearing, be sure to replace it together with the outer race.
- When replacing a bearing of the differential case, replace both the front and rear bearings together.

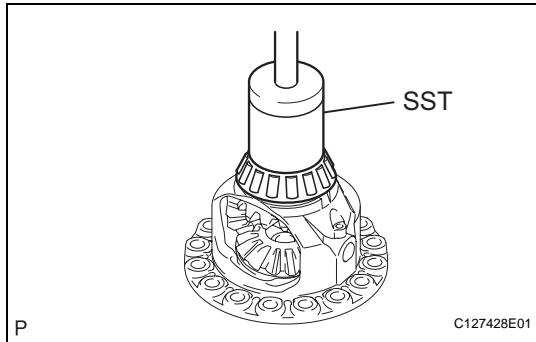
- Using SST and a hammer, tap in the front differential case rear tapered roller bearing outer race to the transaxle housing.

**SST 09550-60010, 09950-60020 (09951-00680),  
09950-70010 (09951-07100, 09951-00890)**

**NOTICE:**

**When replacing the bearing, be sure to replace it together with the outer race.**





## 5. INSTALL FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

- (a) Using SST and a press, press in the front differential case front tapered roller bearing to the differential case.

**SST 09550-60010, 09950-60020 (09951-00680),  
09950-70010 (09951-07100, 09951-00890)**

**NOTICE:**

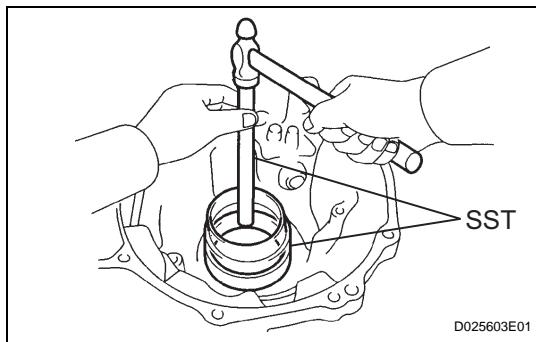
- When replacing the bearing, be sure to replace it together with the outer race.
- When replacing a bearing of the differential case, replace both the front and rear bearings together.

- (b) Using SST and a hammer, tap in the front differential case front tapered roller bearing outer race to the transaxle housing.

**SST 09550-60010, 09950-60020 (09951-00680),  
09950-70010 (09951-07100, 09951-00890)**

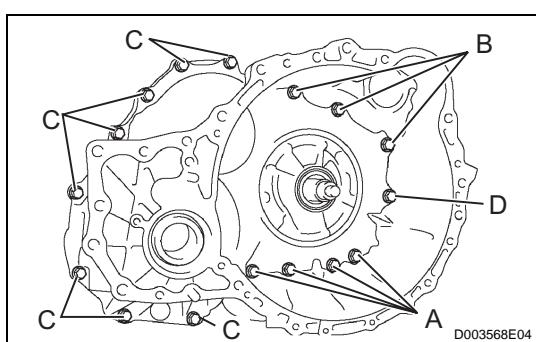
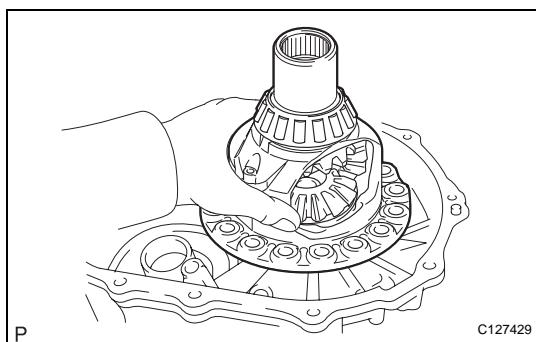
**NOTICE:**

- When replacing the bearing, be sure to replace it together with the outer race.
- Clearance is not allowed between the bearing and transaxle housing.



## 6. ADJUST DIFFERENTIAL SIDE BEARING PRELOAD

- (a) Install the differential assembly to the transaxle case.



- (b) Clean the matching surfaces of the transaxle case and transaxle housing.

- (c) Install the transaxle housing to the transaxle case and tighten them with the 16 bolts.

**Torque:** 22 N·m (224 kgf·cm, 16 ft·lbf) for bolt A  
29 N·m (295 kgf·cm, 21 ft·lbf) for bolt B  
29 N·m (295 kgf·cm, 21 ft·lbf) for bolt C  
22 N·m (224 kgf·cm, 16 ft·lbf) for bolt D

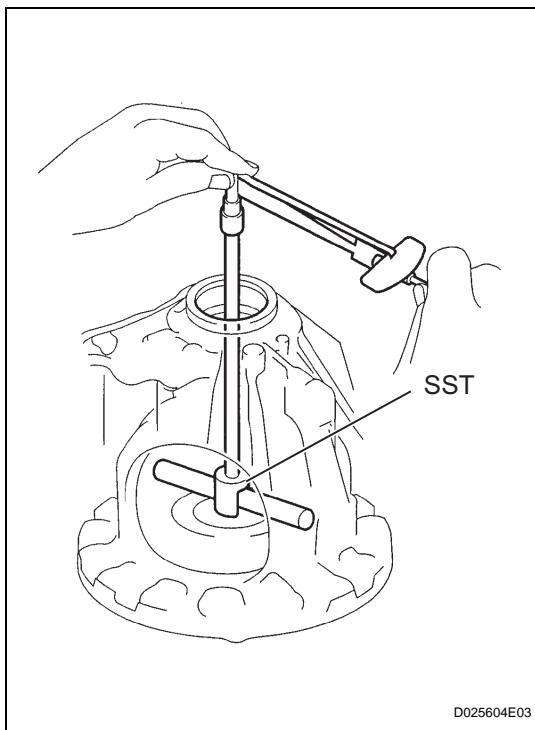
**HINT:**

- Each bolt length is indicated below.

**Bolt length:**

50 mm (1.97 in.) for bolt A  
50 mm (1.97 in.) for bolt B  
42 mm (1.65 in.) for bolt C  
72 mm (2.84 in.) for bolt D

- Usually, bolt A is a non-reusable bolt. In this case, however, it can be used after cleaning it.



- (d) Using SST, turn the differential assembly right and left 2 or 3 times to allow the bearing to settle.

**SST 09564-32011**

- (e) Using SST and a torque wrench, measure the turning torque of the differential.

**SST 09564-32011**

**Torque: Standard turning torque at 60 rpm**

**0.20 to 0.69 N\*m (2.0 to 7.0 kgf\*cm, 1.8 to 6.1 in.\*lbf)**

**AX**

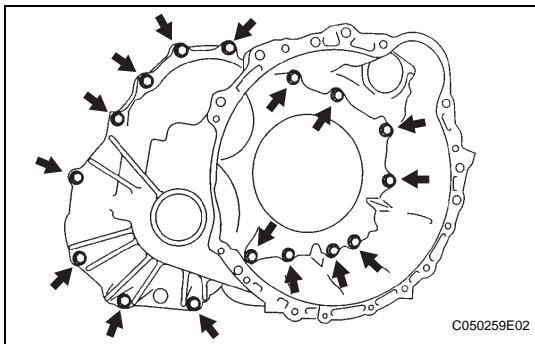
**HINT:**

If the turning torque is not within the specified value, refer to the table below and select a thrust washer so that the turning torque is within the specified value.

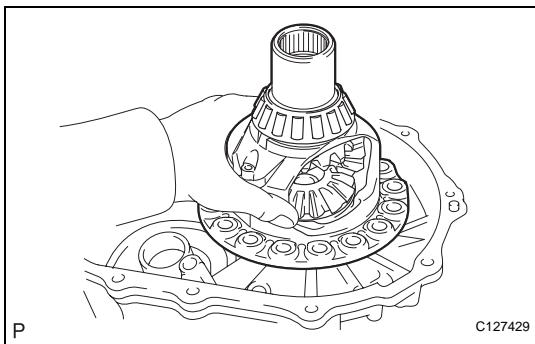
**Flange thickness**

Mark	Thickness	Mark	Thickness
0	2.00 mm (0.0787 in.)	J	2.025 mm (0.07972 in.)
1	2.05 mm (0.0807 in.)	K	2.075 mm (0.08169 in.)
2	2.10 mm (0.0827 in.)	L	2.125 mm (0.08366 in.)
3	2.15 mm (0.0846 in.)	M	2.175 mm (0.08563 in.)
4	2.20 mm (0.0866 in.)	N	2.225 mm (0.08760 in.)
5	2.25 mm (0.0886 in.)	P	2.275 mm (0.08957 in.)
6	2.30 mm (0.0906 in.)	Q	2.325 mm (0.09154 in.)
7	2.35 mm (0.0925 in.)	R	2.375 mm (0.09350 in.)
8	2.40 mm (0.0945 in.)	S	2.425 mm (0.09547 in.)
9	2.45 mm (0.0965 in.)	T	2.475 mm (0.09744 in.)
A	2.50 mm (0.0984 in.)	U	2.525 mm (0.09941 in.)
B	2.55 mm (0.1004 in.)	V	2.575 mm (0.10138 in.)
C	2.60 mm (0.1024 in.)	W	2.625 mm (0.10335 in.)
D	2.65 mm (0.1043 in.)	X	2.675 mm (0.10531 in.)
E	2.70 mm (0.1063 in.)	Y	2.725 mm (0.10728 in.)
F	2.75 mm (0.1083 in.)	AA	2.775 mm (0.10925 in.)
G	2.80 mm (0.1102 in.)	AB	2.825 mm (0.11122 in.)
H	2.85 mm (0.1122 in.)	-	-

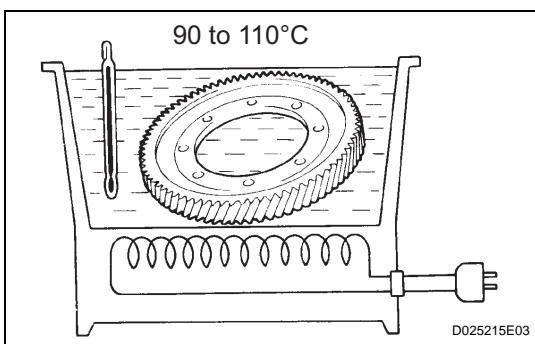
AX



- (f) Remove the 16 bolts and the transaxle housing.



- (g) Remove the differential assembly.



## 7. INSTALL FRONT DIFFERENTIAL RING GEAR

- (a) Using ATF and a heater, heat the front differential ring gear to 90 to 110°C (194.0 to 230.0°F).

**NOTICE:**

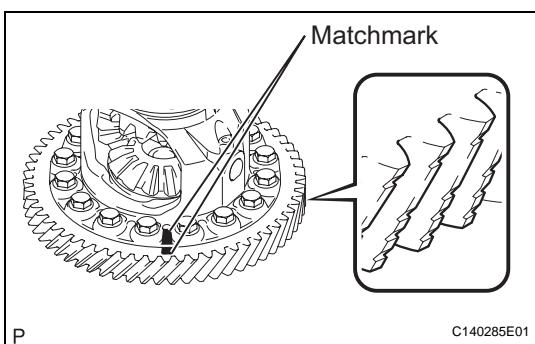
**Do not overheat the ring gear to 110°C (230.0°F) or more.**

- (b) Clean the contract surface of the front differential case.

- (c) Align the matchmarks, and install the front differential ring gear case quickly.

**NOTICE:**

- Check the position and number of the grooves on each end face of the differential ring gear.
- Do not install the bolts while the ring gear is hot.

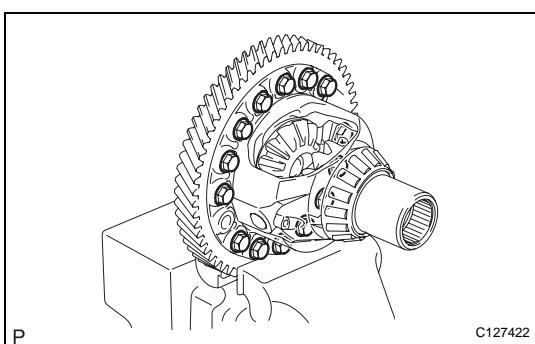


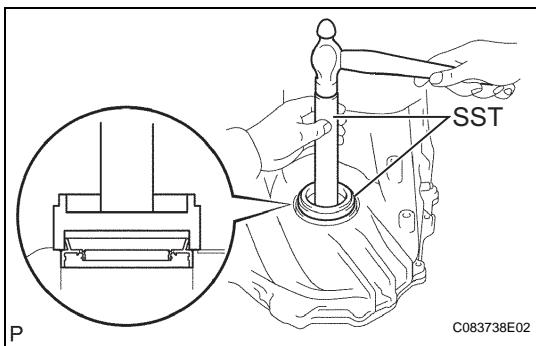
- (d) Tighten the 14 bolts.

**Torque: 95 N·m (969 kgf·cm, 70 ft.·lbf)**

**NOTICE:**

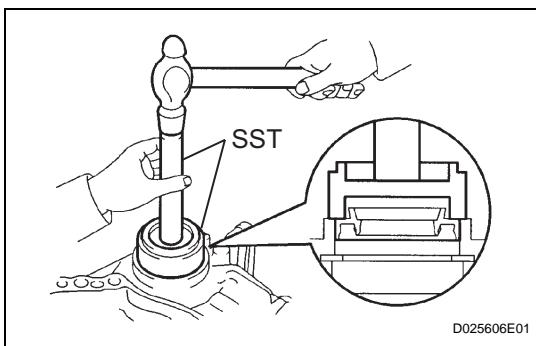
**Tighten the bolts a little at a time in diagonal order.**





## 8. INSTALL DIFFERENTIAL SIDE BEARING RETAINER OIL SEAL

- Coat the lip of a new oil seal with a small amount of MP grease.
- Using SST and a hammer, tap in the oil seal.  
**SST 09223-15020, 09950-70010 (09951-07100)**



## 9. REMOVE TRANSAXLE HOUSING OIL SEAL

- Coat the lip of a new oil seal with a small amount of MP grease.
- Using SST and a hammer, tap in the oil seal.  
**SST 09710-30050, 09950-70010 (09951-07100)**

AX